Be free. Beat *H. pylori*.

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Introduction

Our mission: Be free. Beat *H. pylori*. aims to combat *H. pylori* infection in our local communities. Our initiative seeks to raise awareness and empower vulnerable populations to take action towards a healthier future.

Why should we care?

- *H. pylori* infection affects the lining of the stomach, causing inflammation, ulcers, and bleeding.
- 4.4 billion individuals worldwide & 30-40% of Americans affected
- The leading cause of peptic ulcer disease and gastric cancer (3rd most common cancer worldwide)

Connection to Socioeconomic Status:

- *H. pylori* is most prevalent among the African American, Hispanic, and lower socioeconomic populations
    - Influenced by factors such as crowding, poor nutrition habits, hygiene, and access to clean water

Why are current solutions insufficient?

- While antibiotic treatments are successful, many affected individuals are unable to access medical care
- A community-based intervention that increases awareness and education would be and effective prevention effort that is targeted for at-risk populations

Methodology

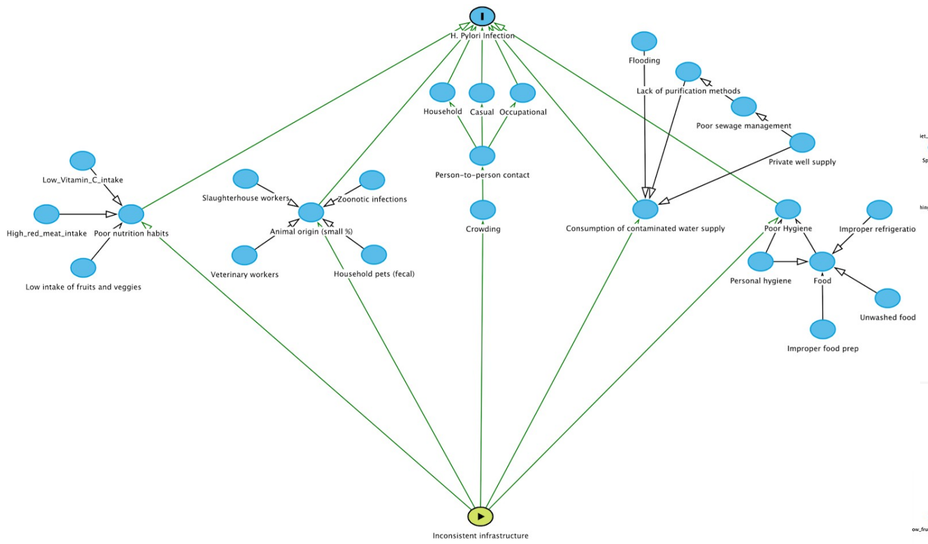
- **Community based intervention:** implemented through Community Health Workers (CHWs) to spread education regarding lifestyle/dietary changes beneficial for gastric health
- **Quick and consumable forms of content**
    - **Brochure** - Quick, visually appealing, easy to read, concise, informative, directive.
    - **Diet/Lifestyle cheat sheet:** Actionable steps that can be taken to prevent *H. pylori* infection
    - **Personal stories**: a page that allows people to relate to others through experience and gain knowledge
    - **Social media accounts:** Accounts people can refer to for updates. An effective way to keep in contact with people over time
    - **Website**: Conglomeration of all materials. Includes background information/links etc.
- **SAM: Granularity in Public Health**
    - Allows us to determine the likelihood of one individual being positive for *H. pylori* based on a number of socioeconomic factors
    - Provides hypothetical stories for individuals

Acknowledgements & References

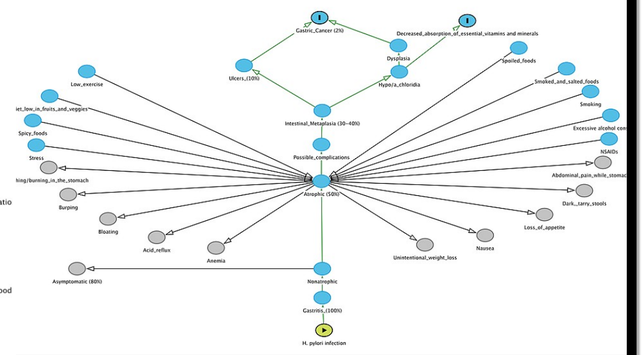
- **Humana:** For funding the project and making it all possible
- **Dr. Daniel Price**: For his help in guiding us through SAM
- **Cindy Paz**: For her help in the creation of our public health initiative
- **References**: can be found on beathpylori.wixsite.com/hpylori

Modeling *H. pylori* using DAG and SAM

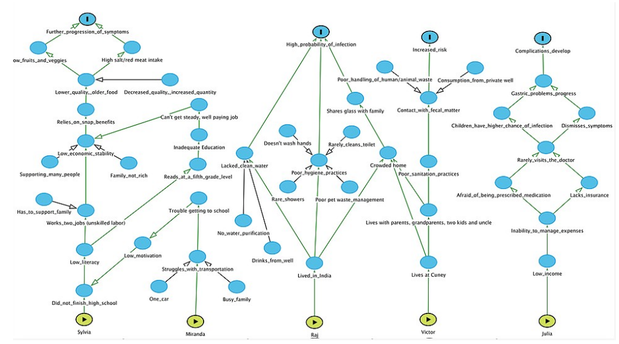
Tying socioeconomic status to *H. pylori* infection



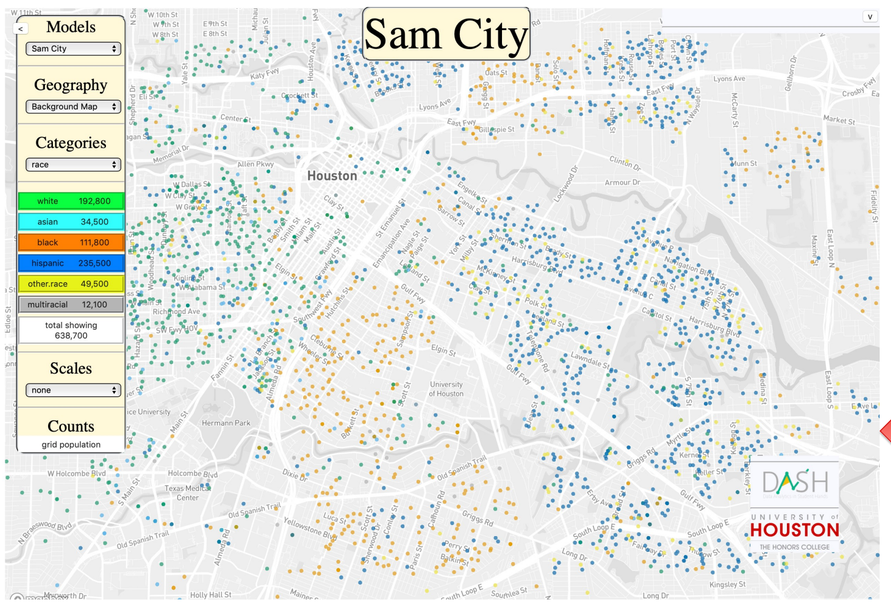
Pathway from infection to complications



Example scenarios leading to infection



Achieving granularity through SAM



Variable	N	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age			
Continuous (years)	7493	25-4	**1·03 (1·02–1·03)**[d]	**1·04 (1·03–1·04)**
Age group (years)				
3–13	1806	7·1	Ref.	–
14–24	1927	17·0	**2·7 (2·1–3·4)**	–
25–51	1873	27·4	**5·0 (4·0–6·2)**	–
≥52	1887	38·5	**8·2 (6·6–10·2)**	–
Gender				
Female	3829	25·3	Ref.	Ref.
Male	3664	25·6	1·0 (0·9–1·1)	1·0 (0·9–1·1)
Race/ethnicity				
Non-Hispanic White	2545	17·4	Ref.	Ref.
Non-Hispanic Black	1700	42·3	**3·5 (2·9–4·2)**	**4·1 (3·3–5·2)**
Hispanic	2998	45·3	**3·9 (3·2–4·8)**	**3·5 (2·6–4·8)**
Other, including multiracial	250	33·7	**2·4 (1·9–3·0)**	**2·2 (1·8–2·7)**
Country of birth origin[e]				
United States	5901	20·5	Ref.	Ref.
Non-US born	1587	54·0	**4·6 (3·8–5·5)**	**2·7 (2·1–3·4)**
Family income[f]				
≥$ 20 000	4315	21·0	Ref.	Ref.
<$ 20 000	2735	34·8	**2·0 (1·5–2·6)**	**1·4 (1·1–1·7)**
Crowded housing[g]				
<1 person per room	5259	23·4	Ref.	Ref.
>1 person per room	2139	36·5	**1·9 (1·5–2·4)**	**1·7 (1·3–2·2)**
Smoking status[d,f]				
Non-smoker	6054	23·2	Ref.	Ref.
Smoker	1230	32·9	**1·6 (1·3–2·0)**	**1·8 (1·5–2·2)**
General health condition[e]				
Excellent	1933	17·6	Ref.	Ref.
Very good	1919	21·2	**1·3 (1·1–1·5)**	1·0 (0·9–1·2)
Good	2328	29·9	**2·0 (1·7–2·4)**	**1·2 (1·02–1·5)**
Fair/poor	1285	41·4	**3·3 (2·6–4·1)**	**1·4 (1·1–1·8)**
Source of tap water[e]				
Public/private water company	6595	25·4	Ref.	Ref.
Well water	735	24·9	1·0 (0·7–1·5)	1·5 (0·96–2·4)
At-home water-treatment device used[f,g]				
Yes	1457	19·3	Ref.	Ref.
No	5927	27·6	**1·6 (1·2–2·1)**	1·1 (0·9–1·4)

Conclusions and Future Goals

- **There is a strong correlation between socioeconomic status and *H. pylori* infection**
    - Income, ethnicity, country of origin, education, living situation etc.
- Understanding this enables the creation of a targeted intervention plan
- **Steps we have taken:**
    - **Website** (includes brochure, diet cheat sheet, blog etc.): Conglomeration of information and materials encompassing the whole of our intervention
    - **SAM city implementation** (in progress): Enables one to see patterns and predict infection rates based on data provided by Humana
    - **Continued Education Unit** (CEU): Provides instruction for CHWs to teach classes on how Nutrition can prevent, manage, and control gastric conditions
- **Steps we will take:** Implementation of CEU and SAM city simulation, creation of new and innovative classes for nutrition, hygiene, and gastric health